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Labor market deregulation and globalization:

Empirical evidence from OECD countries

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Abstract

This paper empirically investigates the influence of globalization on various aspects of labor market deregulation. I employ the data set by Bassanini and Duval (2006) on labor market institutions in OECD countries and the KOF index of globalization. The data set covers 20 OECD countries in the 1982-2003 period. The results suggest that globalization did neither influence the unemployment replacement rate, the unemployment benefit length, public expenditures on ALMP, the tax wedge, union density nor overall employment protection. In contrast, protection of regular employment contracts was diminished when globalization was proceeding rapidly. In fact, domestic aspects, such as unemployment and government ideology are more important determinants of labor market institutions and deregulation processes in OECD countries than globalization. For this reason, working conditions of unskilled workers are not likely to deteriorate and the jobs of unskilled workers are not likely to disappear in the course of globalization. All this is, of course, not to insinuate that globalization has any benign influence on labor market institutions.

Keywords: labor market (de)regulation, globalization, panel data

JEL Classification: F57, F16, J58, J88, C23

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1. Introduction

Commentators believe that globalization plays a significant part in shaping labor market institutions. Advocates of the skeptical view on the role of globalization fear that working conditions for unskilled workers will deteriorate and many jobs of unskilled workers will disappear in the course of globalization. They therefore encourage a more stringent role of government in the domestic economy. In contrast, advocates of the market-oriented view argue in favor of a less regulated labor market because labor market regulation comes at a cost for employers, raises labor costs and unemployment.[1] A final verdict on the two views of globalization can only be derived from an empirical analysis.

Several recent studies have focused on the relationship between globalization and labor market (de)regulation. In his intriguing paper Boulhol (2009a, p. 223), for example, presents a theoretical model which "incorporates labor market rigidities … of footloose capital in order to study how globalization might affect the trade-offs generated by labor market regulation and put pressure on labor market in institutions." Boulhol (2009a, p. 223) identifies two transmission channels of this process: first, "capital mobility triggers a re-allocation of resources, which trade integration amplifies, away from the high-rent / highly unionized sector. Second, the threat of costly relocations encourages labor market deregulation. The latter channel is more efficient because it avoids sub-optimal sectoral specialization". These predictions on the influence of globalization on labor market (de)regulation need to be evaluated empirically. Implementing this task, however, raises the question of how to measure labor market (de)regulation and globalization.

Scholars have investigated various aspects of labor market (de)regulation such as, for example, unemployment benefits, employment protection and deunionization and various facets of globalization. Empirical studies suggest mixed results about the relationship between labor market

[1] For empirical investigations how labor market deregulation affects unemployment see, for example, Blanchard and Wolfers (2000), Baccaro and Rei (2007) and Feldmann (2009). See also Boulhol (2009b) who shows how foreign labor market institutions affect a country's unemployment rate through the trade channel.

institutions and globalization. In a nutshell, globalization does not appear to have a systematic influence on various aspects of labor market (de)regulation. I will discuss the different approaches and empirical findings in more detail below.

Many economic indicators are associated with labor market (de)regulation. Nickell (1997), Blanchard and Wolfers (2000: C19f.) and Bassanini and Duval (2006), for example, distinguish between eight labor market institutions:

- Three measures of different dimensions of the unemployment insurance system: the replacement rate, benefit length, and a measure of active labor policy.
- One measure of employment protection.
- The tax wedge.
- Three measure aspects of collective bargaining: union contract coverage, union density and (union and employer) coordination of bargaining.

An encompassing empirical analysis investigating the influence of globalization on labor market (de)regulation needs to address all these potential channels. Moreover, globalization is a multi-faceted concept that cannot be captured by single economic indicators such as trade openness and foreign direct investment. Therefore, all-embracing globalization indicators have been developed over the last years. The KOF index of globalization is a case in point (see Dreher 2006 and Dreher et al. 2008a).

In this paper, I employ the annual data set on labor market institutions by Bassanini and Duval (2006) and the KOF index of globalization in order to empirically investigate whether globalization has induced labor market deregulation in OECD countries in the 1982-2003 period. My analytical design takes advantage of a compatible data set on labor market institutions. The results suggest that globalization did not have a systematic influence on labor market deregulation. In fact, domestic aspects, such as such as unemployment and government ideology are more important determinants of labor market institutions and their deregulation processes in OECD countries than globalization.

The paper is organized as follows: section 2 presents the data on labor market institutions and globalization. Section 3 sets up the dynamic panel data model and describes the empirical strategy. Section 4 empirically investigates the relationship between the single measures for labor market institutions and globalization: in each scenario, I will first briefly describe the political economic reasoning and results of related empirical studies (if available), specify a hypothesis to be tested and then turn to discuss my own regression results for every single labor market institution indicator. Section 5 concludes.

2. Data

2.1 Labor market institutions

I use the data set on labor market institutions for OECD countries by Bassanini and Duval (2006).[2] The data are available from 1982-2003 and cover 20 OECD countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States (unbalanced panel).

The average unemployment benefit replacement rate refers to "two income situations (100% and 67% of APW earnings), three family situations (single, with dependent spouse, with spouse in work) and three different unemployment durations (1st year, 2nd and 3rd years, and 4th and 5th years of unemployment)" (Bassanini and Duval 2006: 106). Figure 1(a) depicts the average development of the replacement rate for the 20 OECD countries in the 1982-2003 period. The average replacement rate has increased from 25.5 % in 1982 to 32.1% in 1999 (maximum), and slightly decreased to 31.4 % in 2003. Compared across countries, the replacement rates were high on average in countries such as Denmark (54.9) and Belgium (41.1), and low in countries such as Japan (9.9) and the United States (12.8).

[2] These data have been employed, for example, by Bassanini et al. (2009), who examine the influence of job protection legislation on productivity growth and are available at *http://bassax.freeyellow.com/*

The unemployment benefit duration (in years) is defined as the ratio of average to initial unemployment benefit replacement rate. Figure 1(b) shows that the average benefit duration was about 0.65 years, and that it has increased from 0.60 years in 1982 to its maximum of 0.70 in 1995. The benefit length, however, varied between the individual OECD countries: in Australia and New Zealand, it was about one year and the benefit duration was nearly constant over time. In Sweden, it was about 0.33 years and nearly constant over time. In Italy, the benefit duration dramatically increased in the beginnings of the 1990s, but then also immediately decreased again.

Public expenditures on active labor market expenditures (ALMP) are measured as a share of GDP and cover five different subcategories: public employment services and administration, labor market training, youth measures (such as special programs for unemployed and disadvantaged youth), subsidized employment and measures for the disabled. Figure 1(c) clearly indicates that ALMP has increased till the mid 1990s on average: its share of GDP was about 1% in 1994 and has declined to 0.76% in 2001. It is important to note that these data are not available for all 20 OECD countries from 1982-2003 in this data set.[3] ALMP spending (as a share of GDP) differs between low-spending countries, such as the United States, Canada and the United Kingdom and the high-spending Scandinavian countries.

Employment protection is measured by the OECD summary indicator of the stringency of employment protection legislation (EPL). It can be obtained for three main areas: (i) employment protection of regular workers against individual dismissal; (ii) specific requirements for collective dismissals; and (iii) regulation of temporary forms of employment. The OECD has developed a procedure with several steps for constructing cardinal summary indicators of EPL strictness that allow meaningful comparisons to be made, both across countries and between different years. The indicators are normalized to range from 0 to 6, with higher scores representing stricter regulation. Figure 1(d) illustrates that employment protection has become less strict over time: the indicator

[3] In the 1985-2001 period, data are missing for Denmark in 1985, for Japan in 1986, for Ireland in 1992, 1993, 1996, 1997, 1998, 1999 and 2000, for Portugal in 2001.

decreased from 2.23 in 1982 to 1.84 in 2003 on average. It is important to note, however, that employment protection legislation was high in countries such as Portugal (3.91), Spain (3.45) or Italy (3.24). In contrast, the labor market was much less regulated in countries such as Canada (0.80), Ireland (0.91), the United Kingdom (0.62) or the United States (0.20). Over time, employment protection remarkably decreased in countries such as Belgium, Germany and Sweden till the 1990s. No institutional changes have occurred, for example, in Canada and the United States.[4]

The tax wedge refers to the combined labor and consumption tax rate derived from national accounts. It represents a significant indicator because some labor market institutions do not have much effect on unemployment as such, but on wages. For this reason, it matters how taxes affect the ratio of after-tax unemployment benefits to after-tax wages (Blanchard and Wolfers 2000: C13). On average, the tax wedge was 28.75% indicating that employers and consumers pay about one third more than workers and producers receive (Figure 1e). There are two peaks: one in 1987 with 30.1% and one in 1995 with 29.8%. Since 1995, the tax wedge has decreased to 26.8% in 2003. Tax wedges differed between countries such as, for example, Australia (15.3%) and Japan (16.8%) and Italy (41.3%) and Sweden (42.3%). Over time, the tax wedge decreased in countries such as Ireland, the United Kingdom and the United States but increased in countries such as Canada and Japan.

The union density rate measures the share of workers affiliated to a trade union in percent. Figure 1(f) shows that the union density has decreased over time: it was 46.3 % in 1982 and 34.6% in 2003. Dramatic deunionization has occurred in countries such as Australia, New Zealand and Portugal. In countries such as Belgium and Finland, however, the union density rate has even slightly increased over time.

These descriptive statistics illustrate that labor market institutions have changed but do not imply an erosion of the welfare state in the 1982-2003 period.

[4] Moreover, the data allow distinguishing between two types of EPL: protection of regularly and temporary employed workers.

Union contract coverage and (union and employer) coordination of bargaining display time-invariant variables in the data set by Bassanini and Duval (2006). For this reason, I cannot examine these two labor market institutions indicators in a dynamic panel data model.

2.2 The KOF index of globalization

I use the KOF index of globalization. Globalization is a multi-faceted concept that cannot be entirely captured by a single economic indicator such as international trade (as a share of GDP), foreign direct investment or capital account restrictions. The KOF index (Dreher 2006 and Dreher et al. 2008a) represents an attempt to measure globalization in the broad sense that has been accepted in the recent empirical literature.[5] The index covers 123 countries and includes 23 variables and portrays the economic, social and political dimension of globalization. Each of these three dimensions has further subdimensions. For example, economic globalization is described by actual flows (trade, foreign direct investment, portfolio investment and income payments to foreign nationals, each measured as a percentage of GDP) and restrictions (hidden import barriers, mean tariff rate, taxes on international trade and capital account restrictions). Social globalization covers, among others, items such as international tourism, number of internet hosts and users, as well as the number of McDonald's restaurants and the number of IKEA shops (per capita). Political globalization is measured by the number of foreign embassies, membership in international organizations and the participation in U.N. Security Council missions (see Dreher et al. 2008a: 43 ff. for further details). In this study, I use the updated 2009 KOF index of globalization which measures globalization on a scale of 1 to 100, where higher values represent higher levels of globalization.

[5] On the measurement of globalization see also, for example, Edwards (2007).

2.3 Time series properties

A significant point concerns the time series properties of the labor market institution indicators and the KOF globalization indicators. Panel unit root tests show that the variables are non-stationary in levels, but stationary in growth rates.[6] For this reason, the growth rates of the labor market institutions indicators need to be regressed on the growth rates of the KOF globalization indicators in order to avoid spurious regression.

3. The empirical model

The basic estimated dynamic panel data model has the following form:

$$\Delta \ln \textit{Labor market deregulation indicator}_{ijt} = \alpha\, \Delta \ln \textit{Globalization}_{it} + \beta\, \textit{Government Ideology}_{it} + \gamma\, \Delta \ln \textit{Labor market deregulation indicator}_{ijt-1} + \eta_i + \varepsilon_t + u_{ijt}$$

with $i = 1,\ldots, 20$; $j=1,\ldots,6$; $t=1,\ldots,21$ (1)

where the dependent variable "$\Delta \ln \textit{Labor market deregulation indicator}_{ijt}$" denotes the growth rates of the six respective labor market indicators. "$\Delta \ln \textit{Globalization}_{it}$" describes the growth rates of the KOF globalization indicators. I distinguish between a group of control variables that I include in every model describing labor market deregulation and specific variables to take into account the respective individual characteristics and differences between labor market deregulation indicators such as ALMP expenditures or EPL. I follow related studies and always include a

[6] In order to test for stationarity of the time series, I apply a battery of panel unit root tests. The advantage of the panel unit root tests compared to the univariate counterparts is their greater statistical power. It is important to note, however, that the tests to a panel also relate to asymptotic theory and therefore loose power in small samples (see, for example, the survey on unit roots and cointegration in panels by Breitung and Pesaran 2008). I applied the Levin et al. (2002), Im et al. (2003), Breitung (2000) and the Fisher tests referring to Maddala and Wu (1999) and Choi (2001). The results were obtained using Eviews 6. Regarding the first three tests, maximum lag lengths are automatically selected based on the Schwarz Information Criterion. The remaining two tests use the Bartlett kernel for the Newey–West bandwidth selection. The probabilities for the Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality. The test regressions in levels include a constant and a linear deterministic trend; the test regressions in growth rates include a constant but no linear deterministic trend. The results of different unit root tests demonstrate that one mostly cannot reject the null hypothesis of a unit root in levels, but one can always reject the null hypotheses of a unit root in growth rates. For this reason, the time series in growth rates are stationary.

government ideology indicator because we expect higher labor market regulation under leftwing governments (for a discussion of this issue see, for example, Botero et al. 2004). The variable "*Government Ideology*$_{it}$*"* is measured by the indicator presented by Potrafke (2009) which is based on the coding of Budge et al. (1993), whose index of governments' ideological positions has been updated by Woldendorp et al. (1998, 2000). This index places the cabinet on a left-right scale with values between 1 and 5. It takes the value 1 if the share of governing rightwing parties in terms of seats in the cabinet and in parliament is larger than 2/3, and 2 if it is between 1/3 and 2/3. The index is 3 if the share of centre parties is 50%, or if the leftwing and rightwing parties form a coalition government not dominated by one side or the other. The index is symmetric and takes the values 4 and 5 if the leftwing parties dominate. Potrafke's (2009) coding is consistent across time but does not attempt to capture differences between the party-families across countries.[7] I include the government ideology variable in levels. In fact, this implies that leftist and rightwing governments implement their preferred policies incrementally.[8] The variable "Δ ln *Labor market deregulation indicator*$_{ijt-1}$" describes the lagged dependent variable to tackle the persistence of the deregulation indicators. Lastly, "η_i" represents a fixed country effect, "ε_t" is a fixed period effect and "u_{ijt}" describes an error term. Table A1 in the appendix shows descriptive statistics of all variables included.

I now turn to discussing my choice of the panel data estimation method. In the context of dynamic estimation, the common fixed-effect estimator is biased. The estimators taking into account the resulting bias can be broadly grouped into a class of instrumental estimators and a class of direct bias corrected estimators (see Behr 2003, for example, for a discussion). In accordance with large sample properties of the GMM methods, e.g., the estimator proposed by Arellano and Bond (1991) will be biased in my econometric model with N=20. For this reason, bias corrected

[7] Years, in which the government changed, are labeled according to the government that was in office for a longer period, e.g. when a rightwing government followed a leftwing government in August, this year is labeled as leftwing.
[8] This is a significant point because politicians implement their preferred policies step by step during the legislative periods.

estimators are more appropriate. I apply Bruno's (2005a, 2005b) bias corrected least squares dummy variable estimator for dynamic panel data models with small *N*.[9]

4. Results

4.1 Replacement rate

Blanchard and Wolfers (2000) distinguish between three main benefit components of the unemployment insurance system: the replacement rate, benefit length, and measures of active labor policy. Political economic reasoning emphasizes these aspects. One group of political economic models focuses on the determinants of unemployment benefits, and, thus explains the replacement rate and the benefit length. Goerke et al. (2010), for example, examine the political economy of the earnings relationship of unemployment benefits. Their model predicts that unemployment compensation is stronger under rightwing governments and weaker when unions are influential and that deepening international economic integration has ambiguous effects on unemployment compensation. The empirical evaluation with a panel of 19 OECD countries in the 1960-2003 period suggests that leftwing governments have indeed had higher unemployment compensation, whereas trade openness has had a negative influence on the earnings relationship.

Gaston and Nelson (2004) examine the effects of trade liberalization (their measure of globalization) on labor market outcomes via its direct effects on wage bargaining and indirect effects working through redistributive polices such as unemployment benefits. Their empirical results with a panel of OECD countries suggest a positive relationship between trade openness and unemployment benefits, but a negative relationship between trade openness interacted with the budget deficit and unemployment benefits. This finding indicates that an increase in the

[9] I choose the Blundell–Bond (1998) estimator as the initial estimator in which the instruments are collapsed as suggested by Roodman (2006). This procedure makes sure to avoid using invalid and too many instruments (see Roodman 2006 and 2009 for further details). Following Bloom et al. (2007) I undertake 50 repetitions of the procedure to bootstrap the estimated standard errors. Bootstrapping the standard errors is common practice applying this estimator. The reason is that Monte Carlo simulations demonstrated that the analytical variance estimator performs poorly for large coefficients of the lagged dependent variable (see Bruno 2005b for further details). The results do not qualitatively change with more repetitions such as 100, 200 or 500 or when the Arellano–Bond (1991) estimator is chosen as initial estimator.

government debt (as a share of GDP) lowers the response of the benefit replacement rate to trade openness. Gaston and Nelson's (2004) result notwithstanding, I will examine the following hypothesis:

H1: The replacement rate of unemployment benefits decrease in the course of globalization.

Table 1 shows the regression results and indicates that globalization did not influence the replacement rate. The coefficients of the KOF indices of globalization do not turn out to be statistically significant in all specifications. This finding does not depend on the inclusion of any of the control variables. I ran several additional regressions, which included further potential explanatory variables such as the growth rates of the working-age population share, total population, total central government debt (following Gaston and Nelson 2004), the lagged unemployment rate, product market regulation.[10] These variables all do not turn out to be statistically significant. For this reason, one does not need to be concerned with omitted variable bias that could lead to different inferences with respect to the globalization variables.

The regression results in Table 1 illustrate that unemployment replacement rates were highly persistent over time: the lagged dependent variable is statistically significant at the 1% level and corroborates a point estimate of around 0.16. Moreover, an "*F*-Test" on the joint insignificance of the fixed period effects can be strongly rejected. Government ideology does not turn out to be statistically significant. This result is thus not in line with Goerke et al. (2010), who found significant ideology effects. Possible explanations for this discrepancy are that Goerke et al. (2010) estimate their model in levels while I employ growth rates, that they consider a longer observation period, and that their dependent variables is a broader measure of unemployment compensation.

[10] (I employed the data by Bassanini and Duval 2006).

4.2 Benefit duration

The benefit duration is the second important component of unemployment benefits. The political economic explanations of benefit duration are similar to the explanations of the replacement rate.[11] I will examine the following hypothesis:

H2: The benefit duration decreases in the course of globalization.

Table 2 shows the regression results indicating similar inferences as with respect to the replacement rate: globalization did not influence the benefit duration. The lagged dependent variable and fixed period effects (fixed period effects not shown in Table 2) turn out to be important explanatory variables. I have again tested for further potential control variables as named above, which do not turn out to be statistically significant. To include these variables does not change the inferences regarding the globalization variables.

4.3 Active labor market expenditures

Globalization is believed to have ambiguous effects on the welfare state: economic reasoning either suggests that the welfare state collapses (via the supply side or efficiency effect) or that the welfare state is extended (via the demand side or compensation effect). For an encompassing portrait of the globalization-welfare state nexus see, for example, Schulze and Ursprung (1999) and Ursprung (2008). One strand of this literature deals with the structure of welfare state spending[12]. Decomposing social expenditures focusing on labor, for example, in order to elucidate potential compensating effects, has enjoyed remarkable popularity in the literature. Recent studies also focus on spending on (active) labor market policies: the theoretical model by Gaston and Rajaguru (2008), for example, predicts that in times of deepening globalization workers

[11] I will sketch the globalization-induced responses of the welfare state in the next subsection.
[12] Dreher et al. (2008b) and Gemmell et al. (2008), for example, empirically investigate the influence of globalization on the budget composition.

unexposed to the threat of unemployment may prefer public spending on active labor market programs to passive spending such as unemployment benefits. Gaston and Rajaguru (2008) empirically investigate their theoretical predictions in a panel vector autoregressive model (panel VAR) of 16 OECD countries in the 1980-1999 period. They use trade openness, foreign direct investment, portfolio investment and migration to measure globalization and do not find that globalization has had an influence on active and passive labor market policies. In any event, I will examine the following hypothesis:

H3: Active labor market expenditures decreases in the course of globalization.

Table 3 reports the regression results. Similar to the two previous labor market institution indicators, the results again clearly suggest that globalization did not influence ALMP spending (as a share of GDP). In contrast to the two previous labor market institution indicators, however, ALMP spending appears to be driven by important domestic economic variables. I have followed related studies on the globalization-welfare state nexus to include the growth rate of the working age population (share of the 15-64 years old of total population) and the lagged unemployment rate. The unemployment rate in period *t*-1 is statistically significant and displays the expected positive sign. It shows that ALMP spending (as a share of GDP) increased by about 0.14% when the unemployment rate in period *t*-1 increased by 1%. In contrast, government ideology (as in Gaston and Rajaguru 2008) and the working-age population variable do not turn out to be statistically significant. In sum, the results in Table 3 show that including different control variables does not affect the inferences drawn from the globalization variables.

4.4 Employment protection

Globalization is expected to have an influence on employment protection[13]. How globalization affects employment protection is, however, unclear. The political economic model by Dimitrova and Tchipev (2004), for example, examines the influence of globalization, e. g. an increase in international capital mobility on labor market regulations and predicts that labor market institutions are not necessarily scaled down in the course of globalization. In fact, the direction of the globalization-induced policy response is determined by the relative strength of the politically active groups. The number of empirical studies on the relationship between globalization and employment protection is quite limited: Fischer and Somogyi (2009), for example, investigate whether globalization has lowered employment protection of workers in 28 OECD countries in the 1985-2003 period. Their results suggest that globalization (measured by the KOF indices of globalization) has weakened protection of regularly employed, whereas it has tightened the protection of temporarily employed.

Besides globalization, other political economic determinants appear to influence employment protection: the model by Neugart (2008), for example, predicts a political economic equilibrium in which voters, who are not part of the labor force but receive relatively high intra-household transfers, will demand high unemployment protection and low unemployment benefits. The empirical results by Algan and Cahuc (2006) suggest that religious values have an influence on employment protection. They employ previous OECD EPL data for the 1970-1999 period (decadal averages) and find that compared to Catholics, Protestants tend to decrease the level of employment protection, while Muslims increase it. In the following, I will examine the hypothesis:

H4: Employment protection decreases in the course of globalization.

[13] See Blanchard and Wolfers (2000: C14ff.), for example, for a brief discussion of the history of unemployment protection in Europe and Deakin et al. (2007), for example, for an encompassing survey on the evolution of labor law in France, Germany, India, the United Kingdom and the United States.

The results reported in Table 4 show that globalization did not influence EPL. In fact, the empirical model performs quite poorly. I have again included further other control variables which do not turn out to be statistically significant, and which I therefore do not report. The inclusion of these variables does not affect the inferences with respect to the globalization variables at all.

The results somewhat change when EPL subindicators are used: globalization has diminished EPL protection of regularly employed persons (Table 5). This finding is in line with the results by Fischer and Somogyi (2009), although the empirical approaches differ: Fischer and Somogyi (2009) estimate their model in levels, whereas I employ growth rates. However, my results reported in Table 6 do not suggest that globalization has had a positive influence on EPL of temporarily employed workers as the results by Fischer and Somogyi (2009) suggest.

In particular, my results in Table 5 indicate that social globalization was the main driving force of EPL deregulation for regularly employed workers. This finding appears to be in line with the finding by Dreher and Gaston (2007) that it is not economic, but social globalization that fosters labor market deregulation. Friedman (1999), for example, puts globalization at a level with 'Americanisation'. Following this argument, Dreher and Gaston (2007: 166) conclude: "if globalisation implies institutional convergence to some common (U.S.) benchmark, then developed country labour markets are in the process of becoming less unionized and less regulated".

4.5 Tax wedge

The tax wedge represents an additional cost for enterprises. For this reason, increasing economic internationalization and competition is likely to influence the tax wedge. However, I am not aware of any political economic studies that explicitly examine the influence of globalization on the tax wedge.[14] I advance the following hypothesis.

H5: The tax wedge decreases in the course of globalization.

[14] Goerke (2000), for example, presents a theoretical model on employment effects of changes in the composition of the tax wedge.

Table 7 reports the regression results, which indicate that globalization did not influence the tax wedge. I have also included the growth rate of the working-age population and of central government debt (as a share of GDP) in period *t*-1 because these domestic concerns are likely to influence the tax wedge. For example, a rising share in the working-age population tends to reduce the wedge because the working-age population carries the burden of redistribution via higher taxes. An increase in the tax wedge tends to result from rising public debt in the past. The working-age population and the lagged central public debt, however, do not turn out to be statistically significant in Table 7. It is important to note that the lack of statistical significance of the working-age population and of lagged central government debt (as a share of GDP) is a matter of the econometric specification. Excluding the lagged dependent variable turns the working-age population variable statistically significant with a negative coefficient and the lagged central public debt variable statistically significant with a positive coefficient as expected (see also Table 9 in section 4.7). The lagged dependent variable is statistically significant at the 10% level in column (1) and displays the expected positive sign. Government ideology does not turn out to be statistically significant. In addition, I have examined whether globalization has had an influence on the narrowly defined labor tax wedge (not including consumption taxes): it does not.

4.6 Union density

Globalization is likely to influence union organization. Dreher and Gaston (2007), for example, investigate whether globalization has affected union membership in OECD countries in the 1980-1997 period. The novelty of their approach was to use the KOF indices of globalization. Their results suggest that, overall, economic and political globalization did not influence deunionization. In contrast, they find that social globalization was important and fostered deunionization. I will examine the following hypothesis:

H6: Union density decreases in the course of globalization.

The results in Table 8 show that globalization did not influence union density. Deunionization, however, increased under rightwing governments. Following Dreher and Gaston (2007), I have also included the growth rate of the population density as well as inflation (growth rate of the GDP deflator). Both variables do not turn out to be statistically significant and do not affect the result that globalization did not influence union density and that leftwing governments had higher union densities. Relating my results to Dreher and Gaston (2007), it is important to note that I employ annual data whereas they use five-year averages; they regress the level of the globalization indices on the change of union density and also consider a slightly different sample.

4.7 Robustness of the results

I have also estimated the model with feasible generalized least squares (FGLS) with fixed and random country effects and excluded the lagged dependent variable. I have implemented heteroscedastic and autocorrelation consistent (HAC) Newey–West type (Newey and West 1987) standard errors and variance-covariance estimates, because the Wooldridge test (Wooldridge 2002: 176-177) for serial correlation in the idiosyncratic errors of a linear static panel-data model implies the existence of arbitrary serial correlation. Employing these panel data estimators does not change the inferences regarding the globalization variables at all.

Taking growth rates of the dependent variables eliminates time-invariant fixed effects in levels. But in case of individual time trends in each country, computing growth rates just eliminates the time-invariant country effects, but not the individual time components. For this reason, I have included fixed country effects in all the previous regressions. One might argue, however, that given the pattern of the labor market regulation indicators, the time trends capture a great share of the variance, thereby leaving little chance to detect a significant influence of globalization. I have therefore excluded any individual country effects and estimated the model with ordinary least squares (OLS) regression with a common constant. The results in Table 9 suggest that excluding all individual country effects does not change the inferences at all.

It is conceivable that the reported effects could depend on idiosyncratic circumstances in the individual countries. I have therefore tested whether the results are sensitive to the inclusion/exclusion of particular countries in all the previous econometric models. In neither case, excluding one particular country turns the globalization variable statistically significant.

The influence of globalization on labor market institutions could differ between regions, such as East and West (see, for example, Saint-Paul 2007) or due to legal origins. In the analyzed OECD panel, differences due to legal origin may well play a significant role. Hence, I have included dummy variables that take on the value one for German (reference category), French, British, and Scandinavian legal origins (La Porta et al. 1999). Including these dummies does not change the main result at all (results not shown).

A general caveat with panel data models concerns endogeneity of the dependent variable. It is, however, if at all, individual aspects of economic globalization such as trade openness or foreign direct investment that may have been affected by labor market institutions because investors will choose the most appropriate investment locations. In contrast, labor market institutions are not likely to have an influence on the overall globalization process. In any event, to address the potential endogeneity issue technically, I ran all regressions with lagged globalization variables (*t*-1, *t*-2). In almost all cases, the lagged KOF indices of globalization do not turn out to be statistically significant. One exception, however, is the model on ALMP spending: the overall KOF index of globalization (*t*-2) has a negative influence on ALMP expenditures. This effect, however, is driven by political globalization. All the KOF indices of globalization in period *t*-1 do not turn out to be statistically significant (results not shown).

Politicians may not implement their desired labor market reforms incrementally but try to influence labor market (de)regulation shortly after they are elected in office. I have therefore replaced the ideology variable by lagged first differences of the ideology variables (*t*-1, *t*-2, *t*-3).

The lagged first differences of the ideology variables do not turn out to be statistically significant and the inclusion of these variables does not change the inferences of the globalization variables.[15]

A different econometric approach is not employing annual data, but five-year averages to address long-run effects. I have also estimated the models with five-year averaging (similar to column 1 in Tables 1 to 8). The data set by Bassanini and Duval (2006) covers the 1982-2003 period. Hence, taking five-year averages of the variables results in four data points per country, I investigate the 1982-2001 period with five-year averages. It is important to note that the data on public expenditures on ALMP are unbalanced so that taking five-year averages is not possible. The results in Table 10 show that the five-year average of the overall KOF index of globalization does not turn out to be statistically significant.

4.8 Contract coverage and (union and employer) coordination of bargaining

The data collected by Bassanini and Duval (2006) do not allow to empirically investigate whether globalization influenced union contract coverage and (union and employer) coordination of bargaining in a dynamic panel data model. For this reason, I will briefly discuss the empirical results of the related studies that choose different empirical approaches.

Globalization appears to have an ambiguous influence on markups and union bargaining power. Abraham et al. (2009), for example, use a panel of Belgian manufacturing firms and find that import competition puts pressure on price-cost margins and union bargaining power. In contrast, the results by Brock and Dobbelaere (2006), who also employ a micro data set of Belgian manufacturing firms, suggest that trade openness and inward foreign direct investments have influenced workers' bargaining power only very little, if at all. Dumont et al. (2006) investigate the influence of international trade on union bargaining power in five EU countries. Their results suggest a negative influence of internationalization on union bargaining power that is comparable

[15] There are two exceptions: the first difference of the ideology variable in period *t*-3 has a positive influence on the growth rate of ALMP spending and is statistically significant at the 10% percent level. Including the first difference of the ideology variable in period *t*-3 turns the growth rate of the overall KOF index of globalization to be statistically significant at the 10% level in the union density equation.

in newly industrialized countries and OECD countries. In a similar vein, Boulhol et al. (2006) use data on manufacturing firms in the United Kingdom in the 1998-2003 period and find that imports from developed countries have significantly contributed to the decrease in both mark-ups and workers' bargaining power. Further related studies focus on wage, employment and income effects of globalization. Cuyvers et al. (2003), for example, analyze how wages and employment in the EU is affected by international trade with emerging economies.[16] In any event, potential influence of globalization on (union and employer) coordination and bargaining require a more encompassing empirical analysis with time-variant macro data.

5. Conclusion

Globalization did not have a systematic influence on labor market institutions in OECD countries in the 1982-2003 period.[17] Employing the data set by Bassanini and Duval (2006) my results suggest that globalization did neither influence the unemployment replacement rate, the unemployment benefit length, public expenditures on ALMP, the tax wedge, union density nor overall employment protection. In contrast, protection of regular employment contracts was diminished when globalization was proceeding rapidly. In fact, domestic aspects, such as unemployment and government ideology are more important determinants of labor market institutions and their deregulation processes in OECD countries than globalization. For this reason, working conditions of unskilled workers are not likely to deteriorate and the jobs of unskilled workers are not likely to disappear in the course of globalization. All this is, of course, not to insinuate that globalization has any benign influence on labor market institutions.

My findings indicate that other explanations than globalization are required to portray the development of labor market institutions. I will briefly discuss two intriguing political economic

[16] On the effects of trade, trade policy and domestic factors in union wage determination see, for example, Gaston and Trefler (1995).
[17] This finding perfectly corresponds with research on product market deregulation (e.g., Heinemann 2007 and Potrafke 2010) and economic reforms (e.g., Gassebner et al. 2011).

determinants: honesty indicators and, although touched upon in this paper, government ideology. Moreover, the threat of international outsourcing is likely to play an important role that could be addressed in future research.

Civic virtue may well play a significant part in explaining the design of unemployment benefits and employment protection (Algan and Cahuc 2009) and distrust may create public demand for regulation (Aghion et al. 2009). The results by Heinemann et al. (2009) suggest that self-interest is a major determinant for individual assessment of labor market reforms. Future research could investigate whether social capital influences labor market deregulation. An empirical analysis in a panel with macro-data would require time-variant indicators on honesty issues. Developing such indicators emerges as a worthwhile endeavor.

The influence of government ideology on labor market institutions deserves further examinations for two important reasons. First, empirical studies indeed have mixed results. My findings merely suggest that deunionization was proceeding under rightwing governments whereas government ideology did not appear to influence the other five labor market institution indicators. Other studies suggest that parties do matter: leftwing government extended the role of government in the labor market.[18] These results are remarkable because Cukierman's and Tommasi's "When a Nixon goes to China"-Argument does not appear to apply to labor market reforms: Cukierman and Tomassi (1998) have argued that leftwing governments may well have more political credibility to convince the electorate of the need for reform and, thus, labor market deregulation should have appeared under leftwing governments.

[18] Botero et al. (2004), for example, examine labor market deregulation in 85 countries and find that leftwing governments have been associated with more stringent labor regulations than rightwing governments. Di Tella and MacCulloch (2002) examine unemployment benefits in OECD countries in the 1971-1989 period and find that leftwing governments have provided more generous unemployment benefits than rightwing governments. Overall, however, economic variables such as unemployment and interest rates appear to be more important determinants of unemployment benefits than political variables. Johansen et al. (2007) investigate whether government ideology influenced wage setting in Norway. Their results suggest that changing from a conservative to a social democratic government significantly reduces manufacturing wages and makes wages more responsive to unemployment. Vaubel's (2008: 462) case study evidence, however, suggests that labor market deregulation in the EU, did not appear to be related to government ideology.

The threat of international outsourcing may also influence labor market institutions for several reasons. First, globalization might operate via the threat of outsourcing.[19] Second, globalization may increase the incentives for international outsourcing (Lommerud et al. 2009). Third, outsourcing is likely to have an influence on wages for both skilled and unskilled domestic workers.[20] As such, outsourcing will have backfiring effects on unemployment and domestic labor market institutions. I acknowledge that all these potential concerns have not been addressed in my econometric models. Considering the threat of international outsourcing as a cause for reforms of labor market institutions and attempts to measure the threat of international outsourcing certainly remain as worthwhile endeavors for future research.

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[19] See Feenstra and Hanson 1996 and Feenstra 1998, for contributions on globalization and outsourcing.
[20] See, for example, Munch and Skaksen 2009 for an empirical analysis of Danish manufacturing industries.

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Table 1: Regression Results.
Dependent variable: Δ ln Replacement rate.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	-0.2236	-0.2386			
	(0.62)	(0.67)			
Δ ln KOF index of globalization (economic)			0.0266		
			(0.12)		
Δ ln KOF index of globalization (social)				-0.235	
				(0.87)	
Δ ln KOF index of globalization (political)					-0.0606
					(0.33)
Ideology (leftwing)		0.0082	0.0080	0.0077	0.0082
		(0.98)	(0.97)	(0.92)	(0.97)
Lagged dependent variable	0.1608***	0.1615***	0.1608***	0.1622***	0.1609***
	(2.86)	(2.92)	(2.94)	(2.95)	(2.92)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	400	400	400	400
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 2: Regression Results.
Dependent variable: Δ ln Benefit duration.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	-0.1670	-0.1734			
	(0.76)	(0.79)			
Δ ln KOF index of globalization (economic)			0.0118		
			(0.09)		
Δ ln KOF index of globalization (social)				-0.1692	
				(1.02)	
Δ ln KOF index of globalization (political)					-0.0586
					(0.52)
Ideology (leftwing)		0.0035	0.0034	0.0031	0.0035
		(0.69)	(0.68)	(0.61)	(0.68)
Lagged dependent variable	0.1830***	0.1854***	0.1852***	0.1848***	0.1851***
	(3.18)	(3.28)	(3.30)	(3.29)	(3.27)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	400	400	400	400
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 3: Regression Results.
Dependent variable: Δ ln Public Expenditures on ALMP.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	0.3401	0.3241			
	(0.70)	(0.69)			
Δ ln KOF index of globalization (economic)			0.0366		
			(0.12)		
Δ ln KOF index of globalization (social)				0.1322	
				(0.34)	
Δ ln KOF index of globalization (political)					0.1441
					(0.64)
Ideology (leftwing)		0.0090	0.0090	0.0093	0.0089
		(0.82)	(0.82)	(0.84)	(0.82)
Δ ln Working-age population		-1.7379	-1.3968	-1.4603	-1.6274
		(0.35)	(0.28)	(0.29)	(0.33)
Δ ln Unemployment rate (t-1)		0.1345***	0.1338**	0.1358***	0.1391***
		(2.68)	(2.57)	(2.72)	(2.70)
Lagged dependent variable	0.2182***	0.1848***	0.1844***	0.1847***	0.1849***
	(3.15)	(2.66)	(2.63)	(2.65)	(2.63)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	293	293	293	293	293
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 4: Regression Results.
Dependent variable: Δ ln Employment protection.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	-0.1936	-0.1988			
	(1.12)	(1.15)			
Δ ln KOF index of globalization (economic)			-0.0332		
			(0.31)		
Δ ln KOF index of globalization (social)				-0.1113	
				(0.85)	
Δ ln KOF index of globalization (political)					-0.0373
					(0.42)
Ideology (leftwing)		0.0029	0.0028	0.0026	0.0028
		(0.71)	(0.71)	(0.63)	(0.69)
Lagged dependent variable	0.0577	0.0571	0.0578	0.0577	0.0579
	(1.00)	(1.01)	(1.03)	(1.02)	(1.02)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	400	400	400	400
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 5: Regression Results.
Dependent variable: Δ ln Employment protection of regularly employed workers.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	-0.2032**	-0.2046**			
	(2.05)	(2.07)			
Δ ln KOF index of globalization (economic)			-0.0074		
			(0.12)		
Δ ln KOF index of globalization (social)				-0.2105***	
				(2.85)	
Δ ln KOF index of globalization (political)					-0.0266
					(0.52)
Ideology (leftwing)		0.0007	0.0006	0.0002	0.0006
		(0.31)	(0.25)	(0.09)	(0.26)
Lagged dependent variable	0.0528	0.0526	0.0546	0.0522	0.0544
	(0.92)	(0.93)	(0.97)	(0.92)	(0.96)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	400	400	400	400
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 6: Regression Results.
Dependent variable: Δ ln Employment protection of temporarily employed workers
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	-0.0737	-0.0863			
	(0.21)	(0.25)			
Δ ln KOF index of globalization (economic)			-0.0537		
			(0.25)		
Δ ln KOF index of globalization (social)				0.0274	
				(0.10)	
Δ ln KOF index of globalization (political)					0.0018
					(0.01)
Ideology (leftwing)		0.0073	0.0074	0.0073	0.0073
		(0.90)	(0.91)	(0.89)	(0.88)
Lagged dependent variable	0.0581	0.0572	0.0572	0.0573	0.0575
	(1.01)	(1.02)	(1.02)	(1.02)	(1.02)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	400	400	400	400
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 7: Regression Results.
Dependent variable: Δ ln Tax wedge.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	0.1395	0.1436			
	(0.69)	(0.67)			
Δ ln KOF index of globalization (economic)			-0.0045		
			(0.03)		
Δ ln KOF index of globalization (social)				-0.0252	
				(0.16)	
Δ ln KOF index of globalization (political)					0.0941
					(0.98)
Ideology (leftwing)		0.0048	0.0049	0.0048	0.0047
		(1.01)	(1.02)	(1.00)	(1.00)
Δ ln Working-age population		-1.5956	-1.5143	-1.4964	-1.6123
		(0.73)	(0.70)	(0.69)	(0.74)
Δ ln Central government debt (t-1)		0.0316	0.0318	0.0315	0.0319
		(0.65)	(0.61)	(0.66)	(0.65)
Lagged dependent variable	0.1118*	0.0823	0.082	0.0819	0.0827
	(1.92)	(1.24)	(1.24)	(1.24)	(1.25)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	352	352	352	352
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 8: Regression Results.
Dependent variable: Δ ln Union density.
Dynamic bias corrected estimator.

	(1)	(2)	(3)	(4)	(5)
Δ ln KOF index of globalization (overall)	0.1193	0.1027			
	(1.14)	(0.98)			
Δ ln KOF index of globalization (economic)			0.0296		
			(0.47)		
Δ ln KOF index of globalization (social)				0.0045	
				(0.06)	
Δ ln KOF index of globalization (political)					0.0591
					(1.11)
Ideology (leftwing)		0.0095***	0.0095***	0.0096***	0.0095***
		(3.77)	(3.79)	(3.79)	(3.74)
Lagged dependent variable	0.0834	0.083	0.083	0.0834	0.083
	(1.49)	(1.55)	(1.56)	(1.57)	(1.55)
Fixed country effects	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes
Observations	400	400	400	400	400
Number of n	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 9: Regression Results. Robustness Checks.
Dependent variables: Growth rates of the labor market deregulation indicators.
Ordinary least squares (OLS) with robust standard errors.

	Δ ln Replacement rate	Δ ln Benefit duration	Δ ln Public expenditures on ALMP	Δ ln Employment protection	Δ ln Employment protection of regularly employed workers	Δ ln Employment protection of temporarily employed workers	Δ ln Tax wedge	Δ ln Union density
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Δ ln KOF index of globalization (overall)	0.2902	-0.0689	0.5408	-0.2517	-0.2542*	-0.1531	0.2294	0.101
	(1.08)	(0.46)	(1.09)	(1.47)	(1.80)	(0.53)	(1.18)	(0.63)
Ideology (leftwing)	0.0086**	0.0007	0.0092	0.002	0.0003	0.0044	0.0047	0.0104***
	(2.37)	(0.26)	(0.88)	(0.77)	(0.16)	(0.84)	(1.08)	(4.15)
Δ ln Working-age population			0.7361				-3.9839***	
			(0.22)				(2.84)	
Δ ln Unemployment rate (t-1)			0.1984***					
			(2.75)					
Δ ln Public Debt (t-1)							0.0474**	
							(2.13)	
Constant	-0.0330***	-0.0088	0.0324	-0.0085	-0.0067	0.0138	-0.0199	-0.0345***
	(2.97)	(1.08)	(0.85)	(0.76)	(0.81)	(0.42)	(0.76)	(3.71)
Fixed country effects	No	No	No	No	No	No	No	No
Fixed period effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	420	420	315	420	420	420	366	420
Number of n	20	20	20	20	20	20	20	20
R-squared	0.05	0.05	0.15	0.07	0.07	0.06	0.11	0.12

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table 10: Regression Results. Robustness Checks.
Dependent variables: five-year averages of the labor market deregulation indicators.
Dynamic bias corrected estimator.

	five-year average Replacement rate	five-year average Benefit duration	five-year average Employment protection	five-year average Employment protection of regularly employed workers	five-year average Employment protection of temporarily employed workers	five-year average Tax wedge	five-year average Union density
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
five-year average of the KOF index of globalization (overall)	-0.3823	0.0047	-0.008	-0.0059	-0.0058	0.0086	0.0698
	(1.55)	(0.46)	(0.51)	(0.65)	(0.20)	(0.05)	(0.23)
Lagged dependent variable	1.0900***	0.242	1.2985***	1.4546***	1.2666***	0.8473***	1.1266***
	(9.55)	(1.46)	(9.85)	(12.01)	(8.52)	(5.68)	(7.29)
Fixed country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed period effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	60	60	60	60	60	60	60
Number of n	20	20	20	20	20	20	20

Notes: Absolute value of *t*-statistics in parentheses ***, ** and * indicate significance at the level of 1, 5 and 10%, respectively

Table A1. Data description and sources

Variable	Observations	Mean	Std. Dev.	Min	Max	Source
Replacement rate	440	29.71	12.56	0.35	64.94	Bassanini and Duval (2006)
Benefit duration (in years)	440	0.65	0.23	0.32	1.64	Bassanini and Duval (2006)
Public expenditure for ALMP (as a share of GDP)	338	0.86	0.54	0.13	3.07	Bassanini and Duval (2006)
Employment Protection	440	2.08	1.09	0.20	4.19	Bassanini and Duval (2006)
Employment Protection (regularly employed)	440	2.08	1.09	0.20	4.19	Bassanini and Duval (2006)
Employment Protection (temporarily employed)	440	2.08	1.09	0.20	4.19	Bassanini and Duval (2006)
Tax wedge	440	28.75	8.94	6.40	45.50	Bassanini and Duval (2006)
Labor tax wedge	404	27.19	6.07	16.86	41.72	Bassanini and Duval (2006)
Union contract coverage	434	66.89	22.57	19.33	95.00	Bassanini and Duval (2006)
Union density	440	39.89	20.71	8.20	83.86	Bassanini and Duval (2006)
Coordination of bargaining	440	0.55	0.50	0	1	Bassanini and Duval (2006)
KOF index of globalization (overall)	440	75.93	10.12	46.13	93.46	Dreher (2006) and Dreher et al. (2008a)
KOF index of globalization (economic)	440	72.88	12.79	38.94	96.60	Dreher (2006) and Dreher et al. (2008a)
KOF index of globalization (social)	440	72.61	12.00	39.27	93.65	Dreher (2006) and Dreher et al. (2008a)
KOF index of globalization (political)	440	86.63	10.24	50.79	98.78	Dreher (2006) and Dreher et al. (2008a)
Ideology (leftwing)	440	2.88	0.89	1	4	Potrafke (2009)
Working-age population Population ages 15-64 (% of total)	440	66.59	1.79	59.08	69.77	World Bank (2009)
Population (total)	440	4.01E+07	5.95E+07	3180800	2.90E+08	World Bank (2009)
Unemployment rate	440	7.75	4.18	0.40	24.04	Bassanini and Duval (2006)
Total central government debt (as a share of GDP)	392	51.30	26.84	6.21	140.91	OECD (2009)
Product market regulation	440	3.81	1.28	1	6	Bassanini and Duval (2006)
Population density	440	130.86	126.76	1.98	478.90	World Bank (2009)
Inflation (GDP deflator)	440	3.86	3.71	-1.77	24.68	World Bank (2009)
Legal Origin (british)	440	0.30	0.46	0	1	La Porta et al. (1999)
Legal Origin (german)	440	0.30	0.46	0	1	La Porta et al. (1999)
Legal Origin (french)	440	0.20	0.40	0	1	La Porta et al. (1999)
Legal Origin (scandinavian)	440	0.20	0.40	0	1	La Porta et al. (1999)